

Aug. 2, 1938.

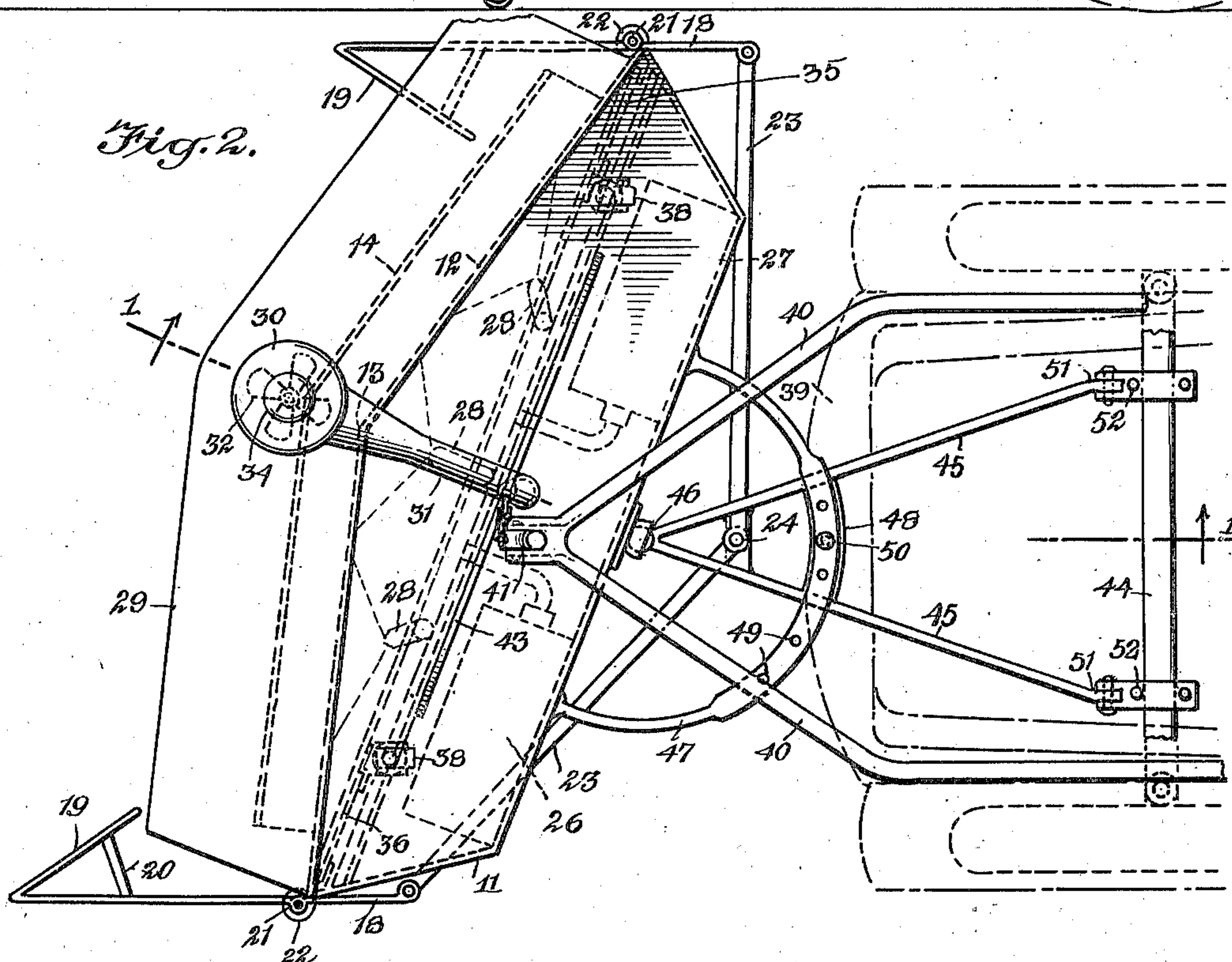
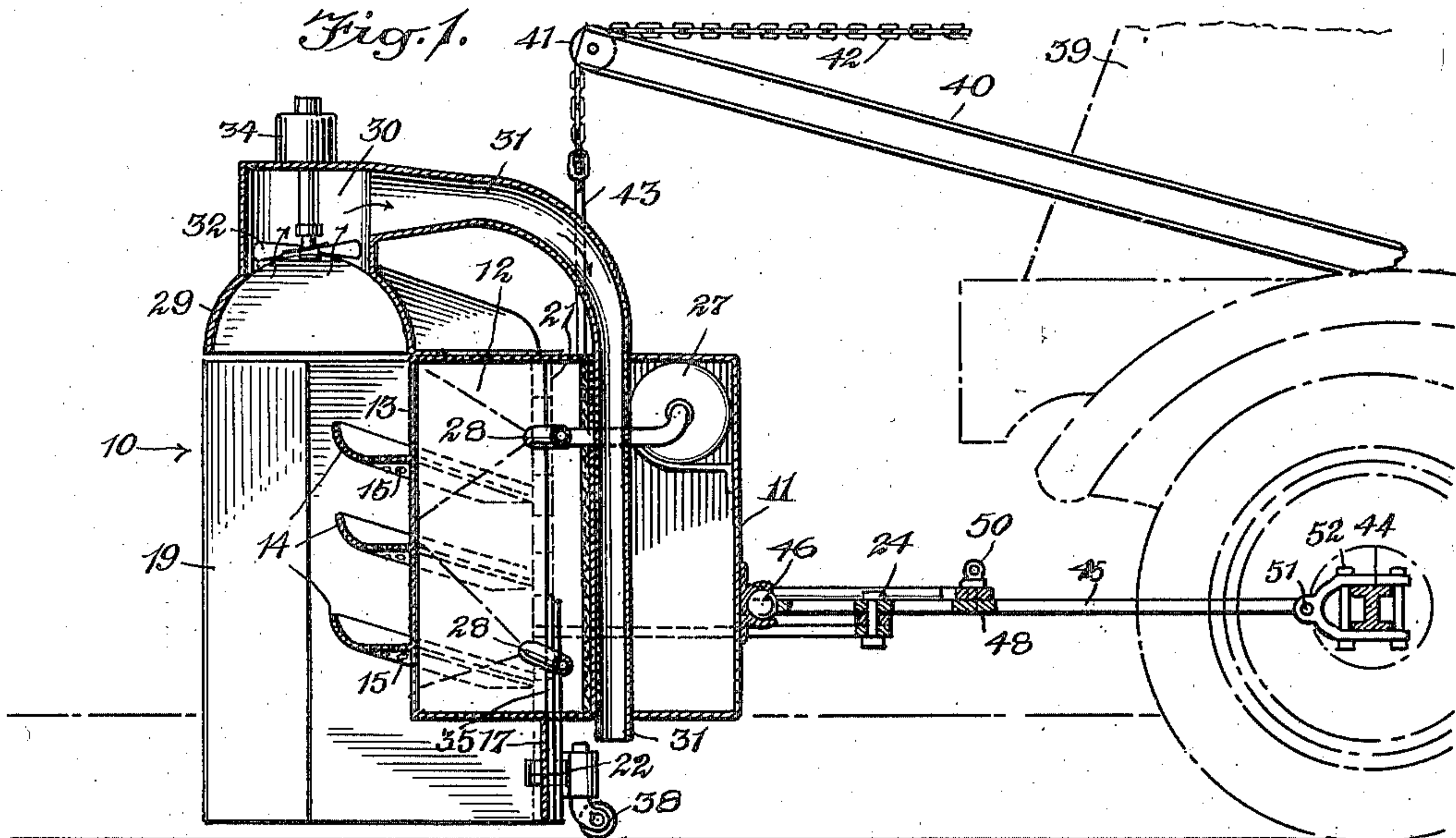
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2,125,797

SNOW REMOVAL MACHINE

Filed June 8, 1937

2 Sheets-Sheet 1



WITNESSES

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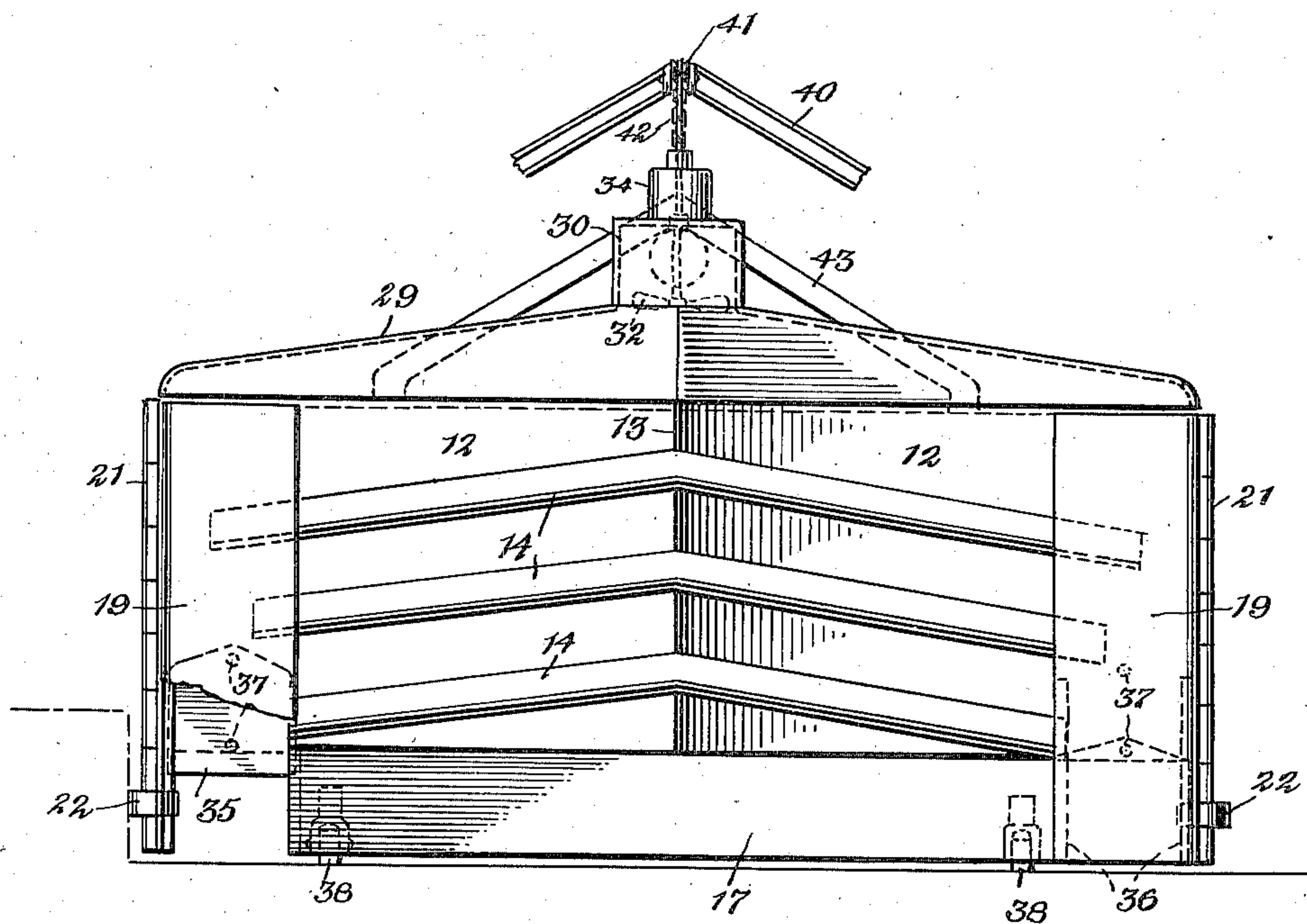
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Fig. 3.



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SNOW REMOVAL MACHINE

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Application June 8, 1937, Serial No. 146,995

7 Claims. (Cl. 37—12)

This invention relates to snow plows, and more particularly to plows adapted to the cleaning of streets, and the disposal of the snow at the same time.

5 In the past, various types of plows or snow removers have been used to clean streets, roads and other thoroughfares. Some of these plows are drawn by a motor element, while others are pushed by motor means. In the past, machines
10 have been constructed for disposing of snow, but have been impractical for many reasons.

15 An object of this invention is to provide a snow removing machine of great mobility and one which will dispose of the snow by contact therewith.

Another object is to provide a device which will melt the snow and provide for the disposal of the water resulting therefrom.

20 In the past, machines were provided for melting snow but made no provision for taking care of the resulting vapors, which tend to freeze on the sidewalks, windows and other surfaces, thus rendering the use of the machines impractical. One of the objects of this invention is the con-
25 densation of the vapors caused by melting snow.

A still further object is to provide a device which is mobile and which may be attached to the ordinary truck, which is the standard equip-
30 ment of most city street cleaning departments.

35 With these and other objects in view, which will appear as the description proceeds, reference is had to the accompanying drawings, in which Fig. 1 represents a cross-sectional view of my improved machine, taken on the line I—I of Fig. 2.

Fig. 2 represents a top view thereof.

Fig. 3 represents a front view of my device.

The machine 10, which consists of a body or cabinet portion 11, has a front or contact plate 40 12. The contact plate 12 is divided and slopes gradually back from the peak 13 thereof. On the side contact plate are a plurality of gutters, 14, which slope gently downward from the peak, 13. These gutters are adapted to pick up the
45 snow and hold it against the contact plate 12. The gutters are provided with openings 15 so that the melting water under the snow will drop through to the next gutter and the surplus water will flow to the sides of the contact plate and be
50 disposed of. On the bottom portion of the contact plate is a straight plate 17 which is adjustable and may be replaced when worn. On either side of the contact plate, 12 there are pivoted side arms 18 provided with wing members 19;
55 for the purpose of strength, the wing members 19

may be re-inforced by a bar, 20. Side arms 18 are pivoted at 21 and a roller 22 is provided at this point to prevent scraping of the device against a curb or other obstruction. The rear portions of the arm 18 are connected by bars 23, 5 which in turn, are united and fixed by means of a pivot at 24.

Behind the contact plate 12 is a compartment, or cabinet 11 in which are placed fuel and air tanks 26 and 27 which supply burners 28. These 10 tanks, 26 and 27 are provided with standard compressing units. The burners 28 throw a flame against the rear of the contact plate 12 and while any number of burners may be used, it is be-
15 lieved that six is the most practical number. The burners 28 are pivotally mounted so that the flame may be thrown on any desired portion of the contact plate or concentrated on any par-
20 ticular section thereof. The burners 28 are controlled by the customary valves which may be of any standard type.

Situated above the contact plate 12 is a shield, 29. This shield is semi-circular and slopes up-
25 wardly toward the center. At the central portion thereof, there is an opening leading into a chamber 30 and the pipe 31. A fan or blower 32 is mounted in the chamber and driven by a motor 34. Thus it will be seen that when the device is pushed against a pile of snow, the vapor and
30 steam caused by the melting snow will be drawn into the chamber 30 by the fan 32, and through the pipe 31, where it will be condensed and discharged. At the bottom of the contact plate 12 and at either side thereof, there are doors or
35 shutters, 35 and 36. These shutters are slidably mounted so that they may be raised and fasten-
ing means 37 are provided to hold them open when it is so desired.

When the device is used for melting snow against a curb, the inner shutter would ordinar- 40 ily be open as shown in Fig. 3, thus allowing the melted snow to run into the gutter. The entire device 10 is mounted on casters or suitable rolling means 38 and is supported by an A-frame
45 on a standard truck 39. The frame consists of an upwardly extending pair of girders 40, which meet on their outer ends and support a pulley 41 through which a chain is placed. The chain 42 is connected to the frame 43 extending upwardly
50 from the machine. Extending forward from the axle 44 are two additional girders, 45, which are pivoted to the back of the chamber 11 at 46. A semi-circular member 47 is fastened to the back of the chamber 11 and adapted to move over the
55 girders 45; at that point, the girders 45 are con-

nected by a plate 48 having upwardly extending flanges to register with the member 47. The member 47 is provided with a series of holes 49 through which a pin 50 may be placed to fix the position of the member 47 with relation to the plate 48. The arms 23 are similarly fixed to the girders 45. Since the members 45 are pivoted at 51 to the fastening means 52, the entire device may be raised or lowered by the operator of the truck by means of the chain 42. It will be seen that the angle at which the entire device rests in relation to the truck may be varied by removing the pin 50 and sliding the member 47 to a different position. While the angle at which the device is placed will vary from time to time, due to the arms 23, the side arms 18 will remain parallel to the truck and of course, parallel to the side of the road or curb.

In operation, the device may be fastened to the customary frame which is the standard equipment of most street cleaning department trucks in the manner shown, the burners 28 then lighted, thus heating the contact face 12. The driver of the truck then pushes the device against the snow and the arms 18 push the snow into and against the contact plate 12, while the wing members 19 direct the snow against the center of the contact plate, thus leaving the shutters free to allow the melted snow to flow backwardly down the gutter. As the snow melts, the water runs off through the gutters 14, and backward through the door 35 or 36. Vapor and steam caused by the melting snow is picked up by the fan 32 and condensed and discharged by the pipe 31.

The entire unit is compact and highly mobile and, since it is adaptable for use with the ordinary truck, economical, as well as practical. When not in use, it may be stored in a relatively small space.

I claim:

1. A device for melting snow, comprising a contact plate, burners situated behind said contact plate and adapted to heat the same, and shutters in said contact plate to allow the passage of melted snow therethrough.

2. In a device for melting snow, comprising a cabinet, a contact plate on said cabinet and

means in said cabinet for heating said contact plate, a pair of arm members pivoted on either end of said contact plate, said arm members having connecting means so that they are held in parallel relation one to the other.

3. A device for melting and disposing of snow, comprising a cabinet, a contact plate on said cabinet, a plurality of gutters, mounted on said contact plate, a shield extending over and above said contact plate, a chamber above said shield, tubular means leading from said shield to the rear of said cabinet and a fan in said chamber to draw vapors into said chamber and through said tubular means.

4. A device of the character described, comprising a cabinet and a contact plate on said cabinet, means for mounting said device on the front of a motor vehicle, and further means for varying the position of said cabinet, with relation to said motor vehicle, side arm members pivoted on either end of said plate and means for maintaining said side members parallel to each other in the direction of the truck.

5. A device of the character described, including a contact plate, means for heating said plate, shutters on the lower and outer edges of said plate, side arm members pivoted to the edges of said plate and wings on said side arm members to force the snow toward the center of the said contact plate and away from said shutters.

6. A device for melting snow comprising a cabinet, a contact plate at the front of said cabinet, adjustable burners in said cabinet adapted to heat said contact plate, semi-tubular gutters on said contact plate and openings in said gutters to allow the melted snow to pass through from the upper gutters to the lower one.

7. In a device for melting snow, a contact plate and means for heating said plate, arm members pivoted to the side of said contact plate adapted to push snow toward the center of said contact plate, means for varying the position of said contact plate, said arm members having connecting rods joined together at a fixed pivot, so that said arm members are at all times parallel to each other regardless of the position of said contact plate.

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